

## CSC303 Sample Critical Review #1

For this critical review, I will be giving my thoughts on the paper “Homophily at Academic Conferences” by Martin Atzmueller and Florian Lemmerich [1]. The paper seeks to identify the role that homophily plays in the interactions of academic conference attendees and establishing of contacts at such conferences. Specifically, they are investigating which attributes of the attendees are predictive of how likely conference participants are to interact with each other at the conference. They did this by using data collected at several conferences – Hypertext 2011, LWA 2010, LWA 2011, LWA 2012. The data was collected by having participants wear RFID devices which would detect when two participants were in close proximity with each other.

Overall, what they found from the data was that participants who had co-authored papers or had a known personal relationship were very likely to have contact at the conference. Co-authoring data was extracted from the DBLP publication database and personal relationships were extracted from the ResearchGate online platform. However, since most attendees of the conference had not actually worked with each other, these do not explain most of the homophily in the contact network. After this, the most predictive attributes were affiliation, country, track and origin – in that order.

Two of the main previous works referenced by the paper are “Enhancing Social Interactions at Conferences” [3] and “High Resolution Dynamical Mapping of Social Interactions with RFID” [4]. These papers, especially the former, mainly describe the systems used to collect the data used in the Atzmueller and Lemmerich paper. The “Conferator” system is described in the first paper, which consists of RFID tracking devices to detect proximity of the wearers, as well as web applications which the participants can use to see who their latest contacts were at the conference and contact those who they interacted with post-conference.

One previous paper that I believe this paper relates to but that is not referenced by the authors is “From triadic closure to conference closure: the role of academic conferences in promoting scientific collaborations” published in *Scientometrics* in October of 2017 [2]. In this paper, the authors propose a form of closure called conference closure, which is when two researchers that meet at a common conference later collaborate on future research. The paper investigates the existence of conference closure and the role of conferences in fostering academic collaboration. What they found is that it does indeed exist and conferences promote collaboration – one conference they examined is the KDD conference, where the probability that a scholar finds a new collaborator is 7.7%.

Although this is not examined in the Atzmueller and Lemmerich paper, one interesting thing to consider might be whether the degree of homophily between two researchers that interact influences the likelihood of conference closure occurring between them. Another angle to consider might be which attributes that researchers have in common are better predictors of conference closure, but this aspect is also not considered in this paper unfortunately. It seems to me that the authors of the paper missed an opportunity to answer these potential questions regarding conference closure using the same dataset they reference in this paper, as the Conferator system they use to obtain their data tracks exactly which participants interacted with each other. In addition to this, it seems the Conferator system also facilitates post-conference interaction somewhat. The authors could then simply use publicly available data to see which participants went on to co-author papers.

One aspect that I found interesting is that similar to many of the studies that we discussed in class which used data collected on users from various online platforms such as Facebook, LiveJournal, or Wikipedia, this paper used data collected from ResearchGate to determine which conference attendees had personal relationships prior to attending the conference. What really struck me about this is the degree to which online platforms and social media allow researchers to draw interesting insights

and conclusions from the data they collect. I would be interested to know if data from ResearchGate or other similar platforms can be used to draw any conclusions about whether researchers mostly attend similar academic conferences to their friends. This could be another example of the interplay between selection and influence, where researchers attend similar academic conferences to their friends, and then by selection, become friends with the people at the conferences, creating large components in the global network of researchers.

Although the results of the paper are fairly convincing, I do not find them to be all that interesting. I believe that the paper could have gone further and investigated more attributes which may be predictors of homophily – for example the research area that attendees focus on. I would be curious to know whether academic conference attendees tend to network with attendees who are in the same research area or if they prefer to have conversations with people outside their research area for possible future interdisciplinary collaborations (or possibly just that they like to learn about what research is being done in fields other than their own). Also, the data the paper is using is relatively old, and I feel they could have examined data from more conferences in addition to having more recent data.

Another aspect I believe the authors could have examined is possibly whether their results hold in other fields as well; in this paper the authors only considered computer science conferences.

That being said, I am hesitant to be too critical of the paper as it is quite possible the Bayesian method and statistical methods they are using to analyze and draw conclusions from their data is indeed very interesting, and I simply do not have the background to appreciate it. Other than that, the paper is well written and conveys the results clearly and precisely. It also describes the methods it used in a clear and concise manner. On this basis, I would give the paper an overall rating of 7.5 out of 10.

## References:

- [1] Atzmueller, Martin & Lemmerich, Florian. (2018). Homophily at Academic Conferences. 109-110. 10.1145/3184558.3186953.
- [2] Wang, Wei & Bai, Xiaomei & Xia, Feng & Bekele, Teshome & Su, Xiaoyan & Tolba, Amr. (2017). From triadic closure to conference closure: the role of academic conferences in promoting scientific collaborations. *Scientometrics*. 113.10.1007/s11192-017-2468-x.
- [3] Martin Atzmueller, Dominik Benz, Stephan Doerfel, Andreas Hotho, Robert Jäschke, Bjoern Elmar Macek, Folke Mitzlaff, Christoph Scholz, and Gerd Stumme. 2011. Enhancing Social Interactions at Conferences. *it – Information Technology* 53, 3 (2011), 101–107.
- [4] Alain Barrat, Ciro Cattuto, Vittoria Colizza, Jean-François Pinton, Wouter Van den Broeck, and Alessandro Vespignani. 2008. High Resolution Dynamical Mapping of Social Interactions With Active RFID. ArXiv e-prints (Nov. 2008). arXiv:cs.CY/0811.4170